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SOLUTIA

Solutions for a better life.

Solutia Inc.
W.G. Krummrich Plant
500 Monsanto Avenue
Sauget, Illinois 62206-1198
Tel 618-271-5835

January 28, 2003

Illinois Environmental Protection Agency
Permit Section, Division of Water Pollution Control
P.O. Box 19276
Springfield, IL 62794-9276

Re: Application for Permit or Construction Approval
Sauget Sites Project – Area 2
Groundwater Migration Control System (GMCS)

Dear Sir or Madam:

Attached is an Application for Permit or Construction Approval for placement of a temporary effluent pipeline running from the vicinity of a closed landfill in Sauget, Illinois to the discharge point at the Sauget Physical/Chemical (P-Chem) Plant. Per an agreement with the United States Environmental Protection Agency (USEPA), Solutia will be implementing a Groundwater Migration Control System (GMCS) at the site. As part of the remedy, three extraction wells will be placed at the site to recover groundwater for treatment. In accordance with the project schedule, one of the extraction wells has been installed and will be utilized for the pilot test.

The temporary pipeline is required to convey treated groundwater produced from a Treatability Pilot Test that will be performed to provide information needed for the design of a back-up treatment system for the GMCS. The test system will consist of a dual module skid-mounted unit with two Granular Activated Carbon (GAC) columns in a lead-lag configuration. During the pilot test, the system will be operated until organic breakthrough occurs in the first of the two GAC columns. The pilot test will discharge a maximum of 300 gpm for a period no longer than 30 days. All water pumped to the Sauget P-Chem Plant will pass through GAC treatment at Site R.

In addition, a Schedule J (Industrial Treatment Works Construction or Pretreatment Works) Form and a Schedule N (Waste Characteristics) Form are attached. These are required for the temporary test system.

Due to the accelerated schedule for the GMCS, we would appreciate your early review of the attached permit application.

If you have any questions, please contact me at (618) 482-6340.

Sincerely,

Richard S. Williams, Ph.D., P.E.
Project Manager
Sauget Sites Project

cc: Sandra Bron – IEPA
Nabil S. Fayoumi – USEPA
Steven D. Smith - Solutia
Bob Cheever – Solutia
Linda Tape – Husch & Eppenberger
George R. Schillinger – American Bottoms
Mark R. Sandfort – Golder Associates

Illinois Environmental Protection Agency
Permit Section, Division of Water Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276

Application for Permit or Construction Approval

WPC-PS-1

For IEPA Use:

1. **Name and Location:** GMCS Temporary Discharge Sauget, IL
   Name of project: Groundwater Migration Control System Temporary Conveyance Discharge
   Municipality or Township: Sauget County: St. Clair
2. **Brief Description of Project:** Groundwater extraction, treatment and discharge to American Bottoms POTW for treatability study.
3. **Documents Being Submitted:** If the project involves any of the items listed below, submit the corresponding schedule, and check the appropriate spaces.

Project

Private Sewer Connection/Extension	A/B	Spray Irrigation	H
Sewer Extension Construct Only	C	Septic Tanks	I
Sewage Treatment Works	D	Industrial Treatment or Pretreatment	J X
Excess Flow Treatment	E	Waste Characteristics	N X
Lift Station/Force Main	F	Erosion Control	P
Sludge Disposal	G	Trust Disclosure	T

Plans: Title _____ Number of Pages: _____

Specifications: Title _____ Number of Books/Pages: _____

Other Documents (Please Specify) GMCS Temporary Treatment and Conveyance System narrative

4. **Land Trust:** Is the project identified in item number 1 herein, for which a permit is requested, to be constructed on land which is the subject of a trust? Yes_____ No X

   If yes, Schedule T (Trust Disclosure) must be completed and item number 7.1.1 must be signed by a beneficiary, trustee or trust officer.

5. **This is an Application for** (*Check Appropriate Line*):

   _____ A. Joint Construction and Operating Permit

   _____ B. Authorization to Construction (See Instructions) NPDES Permit No. IL00 _____ Issue Date

   _____ C. Construct Only Permit (Does Not Include Operations)

   X D. Operate Only Permit (Does Not Include Construction)

6. **Certifications and Approval:**

   6.1 **Certificate by Design Engineer** (*When required; refer to instruction*)

   I hereby certify that I am familiar with the information contained in this application, including the attached schedules indicated above, and that to the best of my knowledge and belief such information is true, complete and accurate. The plans and specifications (specifications other than Standard Specifications or local specifications on file with this Agency) as described above were prepared by me or under my direction.

   Engineer Mark R. Sandfort (Name) 062-052506 (Registration Number)

   Firm: Golder Associates Inc.

   Address: 1630 Heritage Landing, Suite 103
   St. Charles, MO 63303

   Phone Number: 636-936-1554

   Signature X _____

   LICENSED PROFESSIONAL ENGINEER MARK R. SANDFORT 062-052506 STATE OF ILLINOIS Seal

7. **Certifications and Approvals for Permits:**

   7.1 **Certificate by Applicant(s)**

   I/We hereby certify that I/we have read and thoroughly understand the conditions and requirements of this Application, and am/are authorized to sign this application in accordance with the Rules and Regulations of the Illinois Pollution Control Board. I/We hereby agree to conform with the Standard Conditions and with any other Special Conditions made part of this Permit.

7.1.1 Name of Applicant for Permit To Construct Solutia, Inc.

Street 500 Monsanto Ave. City Sauget State IL

Zip Code 62206

Signature X [signature]

Printed Name Steven D. Smith Phone Number 314-674-4660

Title Leader, Remediation Mgmt Organization ESH

7.1.2 **Name of Applicant for Permit to Own and Operate**

Solutia, Inc.

Street 500 Monsanto Avenue City Sauget State IL Zip Code 62206

Signature X [signature]

Printed Name See above Phone Number

Title

7.2 **Attested (Required When Applicant is a Unit of Government)**

Signature X Date Title

(City Clerk, Village Clerk, Sanitary District Clerk, Etc.)

7.3 Applicants from non-governmental applicants which are not signed by the owner, must be signed by a principal executive officer of at least the level of vice president, or a duly authorized representative.

7.4 **Certificate By Intermediate Sewer Owner**

I hereby certify that (Please check one):

X 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

____ 2. The Illinois Pollution Control Board, in PCB ____ dated ____, granted a variance from Subtitle C, Chapter I to allow construction facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary: American Bottoms: Sauget, IL

Sewer System Owner American Bottoms Regional Wastewater Treatment Facility

Street #1 American Bottoms Road City Sauget State IL Zip Code 62201-1075

Signature X [signature] Date Jan 29, 2003 Title Gen. Manager

7.4.1 Additional Certificate By Intermediate Sewer Owner

I hereby certify that (Please check one):

____ 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

____ 2. The Illinois Pollution Control Board, in PCB ____ dated ____, granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary:

Sewer System Owner

Street City State Zip Code

Signature X Date Title

7.5 **Certificate By Waste Treatment Works Owner**

I hereby certify that (Please check one):

X 1. The waste treatment plant to which this project will be tributary has adequate reserve capacity to treat the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

____ 2. The Illinois Pollution Control Board, in PCB ____ dated ____, granted a variance from Subtitle C,

Chapter I to allow construction and operation of the facilities that are the subject of this application.

I also certify that the industrial waste discharges described in the application are capable of being treated by the treatment works.

Name and location of waste treatment works to which this project will be tributary: American Bottoms; Sauget, IL

Treatment Works Owner American Bottoms Regional Wastewater Treatment Facility

Street #1 American Bottoms Road City Sauget State IL Zip Code 62201-1075

Signature X George R. Shillinger Date Jan. 28, 2008 Title Gen. Manager

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

WPC-PS-1.APP

FOR IEPA USE:
LOG #
DATE RECEIVED:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

SCHEDULE J INDUSTRIAL TREATMENT WORKS CONSTRUCTION OR PRETREATMENT WORKS

1. NAME AND LOCATION:
   1.1 Name of project GMCS Temporary Discharge Sauget, IL
   1.2 Plant Location
   1.2.1 (sections not delineated in this area) 1 N 10 W
   (Quarter Section / Section / Township / Range / P.M.)
   1.2.2 Latitude 38° 36' 2.05" ' "NORTH
   1.2.3 Longitude 90° 11' 6.61" ' "WEST
   1.2.3 Name of USGS Quadrangle Map (7.5 or 15 minute) Cahokia, IL - MO
2. NARRATIVE DESCRIPTION AND SCHEMATIC WASTE FLOW DIAGRAM: (see instructions)
   A temporary treatment unit will be used to treat extracted groundwater for a treatment pilot test. See attached GMCS Temporary Treatment And Conveyance System narrative.
   2.1 PRINCIPAL PRODUCTS:
   Carbon filtered groundwater
   2.2 PRINCIPAL RAW MATERIALS: Groundwater
3. DESCRIPTION OF TREATMENT FACILITIES:
   3.1 Submit a flow diagram through all treatment units showing size, volumes, detention times, organic loadings, surface settling rate, weir overflow rate, and other pertinent design data. Include hydraulic profiles and description of monitoring systems.
   3.2 Waste Treatment Works is: Batch _____, Continuous X, No. of Batches/day _____, No. of Shifts/day _____
   3.3 Submit plans and specifications for proposed construction.
   3.4 Discharge is: Existing _____ ; Will begin on March 2003 (estimate)
4. DIRECT DISCHARGE IS TO: Receiving Stream _____ Municipal Sanitary Sewer X Municipal storm or municipal combined sewer _____. If receiving stream or storm sewer are indicated complete the following:
   Name of receiving stream _____ ; tributary to _____ ;
   tributary to _____ ; tributary to _____ ;
5. Is the treatment works subject to flooding? If so, what is the maximum flood elevation of record (in reference to the treatment works datum) and what provisions have been made to eliminate the flooding hazard? Approximately ten feet. Treatment works are mobile and will be removed from site in the event of flooding.
6. APPROXIMATE TIME SCHEDULE: Estimated construction schedule:
   Start of Construction February 2003 (est.) ; Date of Completion March 2003 (est.)
   Operation Schedule Mar. 2003-Mar. 2004(est.) Date Operation Begins March 2003 (est.)
   100% design load to be reached by year 2003
7. DESIGN LOADINGS
   7.1 Design population equivalent (one population equivalent is 100 gallons of wastewater per day, containing 0.17 pounds of BOD_5 and 0.20 pounds of suspended solids;
   BOD 592 lbs ; Suspended Solids 43 lbs ; Flow 0.43 MGD, 300 gpm.
   7.2 Design Average Flow Rate 0.43 MGD.

This Agency is authorized to require this information under IllinoisRevised Statutes, 1979, Chapter 111 1/2, Section 1039, Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

7.3 Design Maximum Flow Rate 0.43 MGD.

7.4 Design Minimum Flow Rate 0.0 MGD.

7.5 Minimum 7-day, 10-year low flow 0.0 cfs 0.0 MGD.

Minimum 7-day, 10-year flow obtained from N/A discharge to POTW

7.6 Dilution Ratio 1 ; 1.

8. FLOW TO TREATMENT WORKS (if existing):

8.1 Flow (last 12 months)

8.1.1 Average Flow N/A MGD

8.1.2 Maximum Flow N/A MGD

8.2 Equipment used in determining above flows N/A

9. Has a preliminary engineering report for this project been submitted to this Agency for Approval?

Yes ___ No X. If so, when was it submitted and approved. Date Submitted _____

Certification # _____

Dated _____

10. List Permits previously issued for the facility: IEPA previous permits: 1992-EN-0503

11. Describe provisions for operation during contingencies such as power failures, flooding, peak loads, equipment failure, maintenance shut downs and other emergencies.

The temporary treatment unit is mobile and can be demobilized from the site in the event of flooding. Groundwater extraction would be suspended in the event of flooding, power failures, equipment failure, peak loads, maintenance shut downs, or other emergencies. See attached GMCS Temporary Treatment and Conveyance System narrative.

12. Complete and submit Schedule G if sludge disposal will be required by this facility.

13. WASTE CHARACTERISTICS: Schedule N must be submitted.

14. TREATMENT WORKS OPERATOR CERTIFICATION: List names and certification numbers of certified operators:

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that section. Failure to do so may prevent this form from being processed and could result in your application being denied.

For IEPA Use:

LOG #

DATE RECEIVED:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62794-9276

SCHEDULE N WASTE CHARACTERISTICS

1. Name of Project GMCS Temporary Conveyance Discharge

2. FLOW DATA

	EXISTING	PROPOSED-DESIGN
2.1 Average Flow (gpd)	none	4,900 (200+gpm)
2.2 Maximum Daily Flow (gpd)	none	7,200 (300 gpm)

2.3 TEMPERATURE

Time of Year	Avg. Intake Temp. F	Avg. Effluent Temp. F	Max. Intake Temp F.	Max. Effluent Temp F.	Max. Temp. Outside Mixing Zone F
SUMMER	58	65	65	70	N/A
WINTER	50	55	55	70	N/A

N/A - Discharge to POTW

2.4 Minimum 7-day, 10-year flow: 0.0 cfs _____ MGD.

2.5 Dilution Ratio: 1 ; 1

2.6 Stream flow rate at time of sampling N/A cfs _____ MGD.

3. CHEMICAL CONSTITUENT Existing Permitted Conditions ____ ; Existing conditions ____ ; Proposed Permitted Conditions ____.

Type of sample: ____ grab (time of collection ____); ____ composite (Number of samples per day ____)

(see instructions for analyses required) (Estimated water quality)

CONSTITUENT	RAW WASTE (mg/l)	TREATED EFFLUENT Avg. (mg/l) Max.	UPSTREAM (mg/l)	DOWNSTREAM SAMPLES (mg/l)
Ammonia Nitrogen (as N)	6	15		
Arsenic (total)	< 0.01	< 0.01		
Barium	0.3	< 0.3		
Boron	1.5	< 1.5		
BOD_5	165	30		
Cadmium	< 0.01	< 0.01		
Carbon Chloroform Extract	-	-		
Chloride	< 300	< 500		
Chromium (total hexavalent)	< 0.05	< 0.05		
Chromium (total tribalent)	< 0.01	< 0.01		

Copper	< 0.01	< 0.01		
Cyanide (total)	< 0.1	< 0.1		
CONSTITUENT	RAW WASTE (mg/l)	TREATED EFFLUENT Avg. (mg/l) Max.	UPSTREAM (mg/l)	DOWNSTREAM SAMPLES (mg/l)
Cyanide (readily released @ 150• F & pH 4.5)	< 0.015	< 0.015		
Dissolved Oxygen	< 1	2		
Fecal Coliform	< 1	> 100		
Fluoride	< 0.2	< 0.2		
Hardness (as $Ca CO_3$)	< 1100	< 1100		
Iron (total)	20	20		
Lead	< 0.06	< 0.06		
Manganese	6	< 6		
MBAS	26	< 26		
Mercury	< 0.001	< 0.001		
Nickel	0.03	< 0.03		
Nitrates (as N)	< 0.05	15		
Oil & Grease (hexane solubles or equivalent)	2.5	< 2.5		
Organic Nitrogen (as N)	24	< 24		
pH	5-9	6-8		
Phenols	50	< 0.1		
Phosphorous (as P)	0.13	< 1		
Radioactivity	-	-		
Selenium	< 0.02	< 0.02		
Silver	0.005	< 0.005		
Sulfate	160	< 300		
Suspended Solids	12	< 200		
Total Dissolved Solids	1200	< 1500		
Zinc	0.05	< 0.5		
Others	600	< 350		